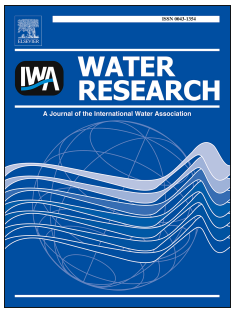
Accepted Manuscript



Can white-rot fungi be a real wastewater treatment alternative for organic micropollutants removal? A review

Josep Anton Mir-Tutusaus, Rim Baccar, Glòria Caminal, Montserrat Sarrà

PII: S0043-1354(18)30163-5

DOI: 10.1016/j.watres.2018.02.056

Reference: WR 13608

To appear in: *Water Research*

Received Date: 4 December 2017

Revised Date: 20 February 2018

Accepted Date: 21 February 2018

Please cite this article as: Mir-Tutusaus, J.A., Baccar, R., Caminal, Glò., Sarrà, M., Can white-rot fungi be a real wastewater treatment alternative for organic micropollutants removal? A review, *Water Research* (2018), doi: 10.1016/j.watres.2018.02.056.

Can white-rot fungi be a real wastewater treatment alternative for organic micropollutants removal? A review

Josep Anton Mir-Tutusaus[a], *Rim Baccar*[b], *Glòria Caminal*[c], *Montserrat Sarrà*[a]*

[a]Departament d'Enginyeria Química Biològica i Ambiental, Escola d'Enginyeria, Universitat Autònoma de Barcelona, 08193 Bellaterra, Barcelona, Spain

[b]ENIS Laboratory of Environmental Engineering and Eco Technology, University of Sfax, BP 1173-3038, Sfax, Tunisia

[c]Institut de Química Avançada de Catalunya (IQAC) CSIC. Jordi Girona 18-26, 08034 Barcelona, Spain

KEYWORDS: micropollutants; wastewater; white-rot fungi; pesticides; immobilization; endocrine disruptors.

Abstract

Micropollutants are a diverse group of compounds that are detected at trace concentrations and may have a negative effect on the environment and/or human health. Most of them are unregulated contaminants, although they have raised a concern in the scientific and global community and future regulation might be written in the near future. Several approaches have been tested to remove micropollutants from wastewater streams. In this manuscript, a focus is placed in reactor biological treatments that use white-rot fungi. A critical review of white-rot fungal-based technologies for micropollutant removal from wastewater has been conducted, several capabilities and limitations of such approaches have been identified and a range of solutions to overcome most of the limitations have been reviewed and/or proposed. Overall, this